SHARED EMS SERVICE OPTIONS
PHASE II REPORT
RESOLVING THE CHALLENGES
A COMMUNITY SOLUTION FOR
DEERFIELD, SUNDERLAND AND
WHATELY

Bruce Baxter and Associates
Haverhill, Massachusetts
November 7, 2012
Executive Summary:

Bruce Baxter and Associates (BBA) was retained by the Franklin Regional Council of Governments (FRCOG) in December 2011 to investigate the feasibility of regionalizing emergency medical services in the Towns of Deerfield, Sunderland, Whately, Hatfield and Conway, Massachusetts. During the course of the feasibility study, two communities, Conway and Hatfield, elected to withdraw.

In June 2012, BBA presented its initial findings in a document entitled, “Franklin Regional Council of Governments Sub-Region Shared EMS Services Report”. Those findings were presented to select boards of Deerfield, Sunderland and Whately at a joint meeting held on June 4, 2012. A copy of this report is included in the attachments.

Following the presentation, FRCOG was requested to extend the agreement with BBA and reconvene the project team who participated in the initial study to determine the options and appropriate resolution to the system challenges. This report outlines their findings and recommendations.

Findings:

The project team reviewed the findings in the report dated May 2012. Additionally BBA met with representative employees from the three communities EMS organizations to discuss the current system, challenges associated with the system and potential solutions.

The project team re-affirmed the findings in the May 2012 report as summarized below:

1. EMS in the United States is confronted with significant challenges that are dramatically changing the operating environment. Those challenges include:
   - Labor challenges associated with the continued erosion of residents willing to join and actively participate in volunteer and on-call EMS Departments.
   - Increased standards of cares.
   - Increased training requirements.
   - Societal changes.
   - The economy.
   - Health care reform.

2. The current “On-Call” 9-1-1 EMS Delivery Model in the Towns of Deerfield, Sunderland and Whately represent the most cost effective approach to providing 9-1-1 Emergency Medical Services in any community.

3. The current model of EMS delivery is unreliable and in the near future will become unsustainable. This is supported by the following facts:
   - Inconsistent levels of clinical care provided.
   - Lack of available personnel result in delayed response times.
   - Lack of available personnel result in increased and inappropriate reliance on mutual aid from area community EMS Departments to manage first response duties in other towns.
   - Increased on scene wait times for personnel to arrive.

Sequelae to these factors include:
Patient complaints regarding delayed response.
Patient inquiries regarding double bills.
Patient and resident perception when transported by agency other than Town’s EMS.
Potential unrecognized liability associated with failure to respond or delayed response.
Lost revenue potential.

4. The EMS Service Chiefs and staff who participated in group discussions recognize that the current approach to EMS delivery must be changed in the near future if their organizations are to continue to successfully fulfill their mission.

**Options:**

The community based 9-1-1 EMS department is designed to consistently meet the needs and expectations of its patients and key stakeholders. Patients are defined as being the recipients of the services provided by 9-1-1 EMS departments. Key stakeholders are defined as being groups who oversee, regulate or benefit for services rendered. They include:

- Residents.
- Select Boards.
- Allied emergency response organizations (9-1-1 Public Safety Answering Points [PSAP], Fire and Police Departments).
- EMS Medical Director
- Receiving hospitals.
- Health insurance companies.
- Regional, State and Federal Regulatory Agencies

The expectations of all stakeholders can be summarized as outlined below:

- Consistent timely reliable response times.
- Consistent provision of high quality clinical care.
- Consistent levels of customer service assuring the patient's needs were met.
- Economic value to patients and key stakeholders.
- Appropriate integration and oversight assuring accountability.

The project team kept the need and expectations of patients as first and foremost as well as the expectations of the key stakeholders as they evaluated various options associated with developing a solution to address the current challenges identified in the previous report.

Multiple approaches were considered. The realistic approaches considered by the project team are outlined in Exhibit I.
Exhibit I: Options to Address System Challenges

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Committee Endorsement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Monitor and address issues on an individual community basis</td>
<td>Not recommended</td>
</tr>
<tr>
<td>2</td>
<td>Implement a municipal regional paramedic intercept service</td>
<td>Not recommended</td>
</tr>
<tr>
<td>3</td>
<td>Enhance an existing services to provide regional coverage</td>
<td>Not recommended</td>
</tr>
<tr>
<td>4</td>
<td>Develop a municipal regional EMS service covering the three communities.</td>
<td>Recommended</td>
</tr>
</tbody>
</table>

After careful consideration of the current system challenges and all realistic options to address the challenges, the project team unanimously recommends Option #4- The development and implementation of a municipal regional EMS System as option that best meets the current and future needs of the communities.

Additional information regarding the recommended approach as well as other options considered is detailed in a later segment of this report.

Background:

Community Demographics:

As detailed in Exhibit II, the proposed service area encompasses 68.84 square miles. The collective residential population is 10,184 residents residing in 4421 housing units. Interstate 91, Routes 5, 116 and 63 are within the proposed service area. Conservative estimates indicate the population swells by an additional 5000 during the work week. Traffic volume averages 15000+ vehicles per day during the work week with an influx during peak times of as many as 50,000 vehicles per day.

The proposed service area is affluent with communities having a median family income of $81,000.00 annually. Poverty levels within the communities are less than 4%. Elderly residents account for 15.2% of the total proposed population base slightly above the state average of 13.2%

Exhibit II: Community Demographics

<table>
<thead>
<tr>
<th>Community</th>
<th>Population</th>
<th>Unemployment Rate</th>
<th>Med. Household Income</th>
<th>Housing Units</th>
<th>Geo Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deerfield</td>
<td>5000</td>
<td>6.3%</td>
<td>$87,969.00</td>
<td>2105</td>
<td>33.42 sq. mi</td>
</tr>
<tr>
<td>Sunderland</td>
<td>3684</td>
<td>3.2%</td>
<td>$73,364.00</td>
<td>1638</td>
<td>14.75 sq. mi</td>
</tr>
<tr>
<td>Whately</td>
<td>1500</td>
<td>1.2%</td>
<td>$81,667.00</td>
<td>678</td>
<td>20.67 sq. mi</td>
</tr>
<tr>
<td>Totals</td>
<td>10,184</td>
<td>3.57%</td>
<td>$81,000.00</td>
<td>4421</td>
<td>68.84 sq. miles</td>
</tr>
</tbody>
</table>

EMS Demographics:

As outlined in Exhibit III, Each community owns and operates its own community based ambulance service. The fully loaded costs of operating ambulances in the three communities are difficult to determine. Direct costs identified in three of the communities (Deerfield, Sunderland and Whately) approximate $420,000.00. However we believe those costs to be incomplete and understated by as much as 40% in comparison to budgets provided by similar sized organizations with a similar call volume. This is a result of some costs being accounted for in different line items based upon individual communities’ approach to fiscal management. As an example, costs for paramedic intercept services, vehicle...
depreciation/replacement, insurance, fuel, employee benefits, space allocation, interest expense, banking and legal expenses are frequently in accounts other than the direct EMS accounts. In using grant applications as an example, most communities charge 35%-50% onto a stated department’s budget to cover those “hidden expenses”. As such, the cost of providing EMS in the three reporting communities may approximate $600,000.00. The net cost of providing service to the tax payer is minimally $135,460.00. That figure will vary based upon transport volume and payer profile detailed in a later segment.

The services responding to the Abbreviated EMS Needs Assessment conducted in December 2011 indicated there was a total of a total of 910 responses resulting in 759 patient transports by the community service or mutual aid providers. This equates to 2.49 responses and 2.08 transports per day.

Exhibit III*:

<table>
<thead>
<tr>
<th>Town</th>
<th>#</th>
<th>Type</th>
<th>Year</th>
<th>Clinical</th>
<th>Responses</th>
<th>Transports</th>
<th>Hourly Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deerfield</td>
<td>1</td>
<td>IAD</td>
<td>2010</td>
<td>AEMT</td>
<td>560</td>
<td>500</td>
<td>$17.70-$22.00 per hour</td>
</tr>
<tr>
<td>Sunderland</td>
<td>1</td>
<td>III</td>
<td>2007</td>
<td>BLS</td>
<td>230</td>
<td>159</td>
<td>$16.31 per hour +$2.00 call pay</td>
</tr>
<tr>
<td>Whately</td>
<td>1</td>
<td>III</td>
<td>2000</td>
<td>AEMT</td>
<td>120</td>
<td>100</td>
<td>$13.33 per hour</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>910</td>
<td>759</td>
<td></td>
</tr>
</tbody>
</table>

* Data source: Baxter and Associates EMS System Survey Tool December 2011

Each community owns one ambulance. One ambulance is a Type I Additional Duty style ambulance. Two ambulances are Type III style ambulances. The average age of the combined fleet is 6.3 years. Two ambulances are at or near the end of their depreciation life cycle. The anticipated 2012 cost of replacing a Type 1 additional duty ambulance without capital medical and radio equipment approximates $210,000.00. The anticipated cost of replacing a Type II ambulance in 2012 is $155,000.00. Federally mandated changes in ambulance design are expected to add an additional $25,000.00 to the cost of a new ambulance beginning in 2014. Based on this fact the cost to replace the three ambulances after 2013 will require a total investment of $600,000.00.

Capital medical equipment (non-disposables) has a useful life cycle of five (5) to ten (10) years based on the device before needing replacement. The 2012 cost associated with replacing required capital equipment carried in an ambulance (stretchers, cardiac monitors, treatment equipment, computers, radios as examples) is $100,000.00. Eighty percent (80%) of the required equipment carried on board the current ambulances is fully depreciated and will require replacement in the foreseeable future. The device replacement costs increase an average of five percent (5%) per year.

There is no ready reserve ambulance capacity in any community. If a community ambulance is out of service for maintenance or repairs, EMS personnel respond to the scene to stabilize the patient while waiting for a mutual aid ambulance to arrive and transport the patient to the hospital. This results in a delay of responding to and transporting a critically ill patient to the hospital as well as a loss of revenue.

Ambulances are staffed by a mix of career and on-call personnel that vary by community. Hourly wages range from $13.33 per hour to $22.00 per hour based upon the individual community. Some communities pay on-call members an hourly stipend of $2.00 an hour to be available for a response in addition to the hourly wage when actively engaged in a response.
There are no formalized quality improvement based training and education programs to assure clinical excellence in place. The services and providers collaborate with the Western Massachusetts EMS Regional Council office to provide the required refresher and continuing education training mandated by the Commonwealth of Massachusetts to maintain their certifications.

Two services operate at the clinical level of Advanced EMT providing care at a limited clinical level of advanced life support. One service operates at the clinical level of Basic Life Support with personnel certified as Emergency Medical Technicians. All services personnel are trained and equipped with automatic external defibrillators (AEDS).

No community based service provides paramedic advanced life support. The services use one of three paramedic service providers on an as available as needed basis. There is some simultaneous dispatch of paramedics with the community ambulances by the 9-1-1 PSAP, but no dedicated response unit for the service area. Services also advise their decision on selecting a paramedic unit varies with the patient location and patient destination hospital. Services do have reimbursement agreements with the various paramedic services; however there is no dedicated paramedic coverage. As such paramedic response is not guaranteed, or monitored to see if the current program is meeting the communities’ needs.

Noteworthy is the fact that Deerfield currently employs two full-time paramedics. The service also owns a fully configured Life Pak 12 cardiac monitor capable of supporting paramedic practice. This is the most expensive piece of medical equipment required to support pre-hospital paramedic practice. As the cost associated with acquiring the remaining paramedic equipment is less than a $25,000.00 investment, and the State now permits services to upgrade to providing paramedic level services twenty-four (24) hours a day, seven (7) days a week over a three year time period, Deerfield should consider making immediate moves to implement paramedic services for the community and proposed service area. Doing so will better serve the community and needs of their patients reduce the expense line item for outside paramedic services and enhance local revenue opportunities.

As previously identified in Exhibit II, during FY’11 there was a total of 910 9-1-1 requests for EMS response resulting in the transport of 759 patients in the three towns or 2.49 responses and 2.08 transports per day.

**Community Service Response Time and Call Distribution Analysis:**

Response time is defined as being the time elapsed from the moment a 9-1-1 call requesting emergency medical services is received by the PSAP to the time a staffed ambulance arrives at the scene capable of transporting the patient to a hospital.

Response Time may be analyzed using average or fractile methodology. There is a significant difference between the two methodologies. An average response time indicates that in 50% of the cases the specific EMS response unit arrived on scene in 50% of the cases in the stated amount of time or less. That means that in 50% of the cases the response time was longer but provides no insight as to how much more time was required.

Fractile response time allows analysis that clearly identifies the time necessary to arrive in a defined percentage of all responses. This allows communities to evaluate the real amount of time necessary for an EMS unit to arrive on scene. As an industry, EMS uses fractile response time at the 90th percentile to evaluate EMS system response time performance. In other words this approach looks at the amount of time it took an ambulance to arrive on scene in 90% of all responses for a defined period of time. On a national perspective, similar sized communities strive to achieve and maintain a consistent ambulance response time of 15 minutes 59 seconds or less in 90% of 9-1-1 responses.
The local communities’ access their community EMS system via a central 9-1-1 Public Safety Answering Point (PSAP) located at the Shelburne State Police Barracks known as “Shelburne Control”. Shelburne Control dispatches the three EMS Departments. The dispatchers are certified Emergency Medical Dispatchers and utilize the Clawson Medical Priority Dispatch System (MPDS) to categorize medical calls as well as to provide dispatch life support (first aid instructions for the caller to apply until professional help arrives at the scene). MPDS is a well regarded Emergency Medical Dispatch Program (EMD) that integrates well into a tiered EMS system and if implemented properly can positively support the EMS system billing activities.

Unfortunately Shelburne Control is unable to provide a useful EMS Centric response data to analyze the response time performance or identify the historical distribution of calls based upon time of day or day of week for any of the three communities EMS departments.

The Franklin County Regional Council of Governments was able to manipulate the limited data set provided by Shelburne Control for the communities detailing fractile response times in FY’11 in Exhibit IV:

**Exhibit IV: FY’11 Fractile Response Times**

<table>
<thead>
<tr>
<th>Town</th>
<th>Fractile Ambulance Response Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deerfield</td>
<td>26 minutes in 87% of all responses</td>
</tr>
<tr>
<td>Sunderland</td>
<td>18 minutes in 91% of all responses</td>
</tr>
<tr>
<td>Whately</td>
<td>19 minutes in 91% of all responses</td>
</tr>
</tbody>
</table>

During the study period BAA worked with the three local service chiefs to obtain data from their electronic patient care records systems (ePCR) and the State MATRIS System (Commonwealth of Massachusetts-Department of Public Health, Office of Emergency Medical Services State EMS Data Registry) to validate response time and call distribution data presented in the initial report and to identify the distribution of calls based on day of week and time of day as well as other performance indicators inclusive of distance in miles between the EMS Station and location of the call and services “Out of Chute Times” (time between service being notified and ambulance initiating a response).

Exhibit V details the fractile response time analysis for CY’2012 year to date as well as the distance of the call for the community EMS station.

**Exhibit V: CY’12 YTD Fractile v. Average Response Time Analysis:**

<table>
<thead>
<tr>
<th>Town</th>
<th>Average Response Time</th>
<th>90% or &gt;Fractile Response Times</th>
<th>Distance from Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deerfield</td>
<td>10.1 Minutes</td>
<td>17.0 Minutes</td>
<td>99% = or &lt; 5 miles</td>
</tr>
<tr>
<td>Sunderland</td>
<td>11.4 Minutes</td>
<td>18.0 Minutes</td>
<td>94% = or &lt; 5 miles</td>
</tr>
<tr>
<td>Whately</td>
<td>13.06 Minutes</td>
<td>18.0 Minutes</td>
<td>93% = or &lt; 5 miles</td>
</tr>
</tbody>
</table>

*MATRIS Data Sept 2011- Sept 2012

Exhibit VI details the call distribution based on time of day and day of week for the time period of September 2011-Sept 2012 that were actually managed by the community based services. It does not reflect those calls managed by outside mutual aid ambulance services who responded and or transported the patient on behalf of a local community.

The EMS service chiefs report that 20% of all 9-1-1 EMS requests in the communities are transported by mutual aid ambulance services due to the lack of personnel.
This Exhibit clearly demonstrates that 9-1-1 EMS call volumes peak during the periods of time when on-call personnel are unavailable. Although the volume diminishes during late night hours, on-call personnel availability declines beginning at 0400 hours during work days.

**Exhibit VI: CY 12 YTD Call Distribution Matrix- All Communities**

<table>
<thead>
<tr>
<th>Time</th>
<th>Sun</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001-0300</td>
<td>11</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>49</td>
</tr>
<tr>
<td>0301-0600</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>3</td>
<td>33</td>
</tr>
<tr>
<td>0601-0900</td>
<td>6</td>
<td>9</td>
<td>8</td>
<td>10</td>
<td>9</td>
<td>11</td>
<td>10</td>
<td>63</td>
</tr>
<tr>
<td>0901-1200</td>
<td>14</td>
<td>11</td>
<td>14</td>
<td>17</td>
<td>17</td>
<td>15</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>1201-1500</td>
<td>18</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>14</td>
<td>19</td>
<td>19</td>
<td>106</td>
</tr>
<tr>
<td>1501-1800</td>
<td>15</td>
<td>13</td>
<td>21</td>
<td>18</td>
<td>10</td>
<td>12</td>
<td>18</td>
<td>107</td>
</tr>
<tr>
<td>1801-2100</td>
<td>12</td>
<td>17</td>
<td>20</td>
<td>7</td>
<td>16</td>
<td>13</td>
<td>13</td>
<td>98</td>
</tr>
<tr>
<td>2101-2400</td>
<td>9</td>
<td>4</td>
<td>3</td>
<td>9</td>
<td>12</td>
<td>7</td>
<td>15</td>
<td>59</td>
</tr>
<tr>
<td>Totals</td>
<td>89</td>
<td>73</td>
<td>86</td>
<td>82</td>
<td>88</td>
<td>94</td>
<td>102</td>
<td>616</td>
</tr>
</tbody>
</table>

* MATRIS Data Sept 2011-Sept 2012

Exhibit VII details the “Out of Chute Time” for each community EMS service. “Out of Chute” time refers to the time elapsed between the dispatch or EMS notification of a call to the time a transporting EMS response unit (ambulance) signs on the air indicating it is enroute to the scene. Noteworthy is the fact that 25% to 75% of the time the ambulance requires more than 5 minutes after dispatch to initiate a response. While on-call personnel location at the time of call notification impacts this data, it is also very representative of on call EMS systems that lack the immediate availability of personnel to respond to a call.

**Exhibit VII: Out of Chute Time**

<table>
<thead>
<tr>
<th>Time Elapsed</th>
<th>Deerfield</th>
<th>Sunderland</th>
<th>Whately</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1 Minutes</td>
<td>32.51%</td>
<td>6.79%</td>
<td>6.82%</td>
</tr>
<tr>
<td>2-3 Minutes</td>
<td>27.13%</td>
<td>11.31%</td>
<td>2.27%</td>
</tr>
<tr>
<td>4-5 Minutes</td>
<td>15.02%</td>
<td>13.57%</td>
<td>15.91%</td>
</tr>
<tr>
<td>&gt; 5 minutes</td>
<td>25.34%</td>
<td>68.33%</td>
<td>75%</td>
</tr>
</tbody>
</table>

* MATRIS Data Sept 2011-Sept 2012

A summary analysis of this data reveals:

1. The majority of EMS responses are located within five miles travel distance of the local EMS stations.
2. 77% of the EMS responses are between the hours 6AM and 9PM
3. The Fractile Response Time ranges from 17 minutes to 18 minutes per community.
4. ~70% of the response time elapsed between the time the call is dispatched to the time the ambulance arrives on scene is wait time for a crew to arrive at the ambulance station.
5. Ambulance out of chute times for each community indicates an emerging issue associated with the lack of immediately available on-call personnel.
6. The data does not include response time analysis from outside the three towns managing a call secondary to the lack of an available ambulance/crew to respond.
7. A local health clinic has stopped/significantly reduced its reliance on requesting 9-1-1 services from one community service in favor of consistently using the hospital owned service.

8. Service chiefs have identified that 20% of the call volume has been transported by an outside agency. The rationale ranges from limiting the time their crews are out of service on a call- if the patient requires paramedic level care; the lack of a crew to respond; the mutual aid paramedic ambulance arrives on scene first.

9. The data also does not track the response time associated with the paramedic response into the communities.

10. Norms for similar sized services covering similar sized geography is out of chute times of 75% or > in 5 Minutes or < is a fractile response time of 90% within 15 minutes 59 seconds; 85% within 12 minutes 59 seconds.

Consistent timely response is critical to patient outcomes. There are a vast number of medical conditions which are time sensitive. From a clinical perspective time sensitive means that the longer definitive care is delayed the less like a patient will have a complete recovery from their medical incident. As an example:

- Patients with exsanguinating hemorrhage- internal or external can bleed out with in two minutes.
- Patients whose breathing or circulation is impaired can experience irreversible in less than ten minutes.
- Patient experiencing heart attacks, strokes, difficulty breathing, a sudden ability to maintain a state of clear consciousness, who are choking, or who have been injured from a fall- not only need definitive pre-hospital clinical care at the ALS paramedic level within 12 minutes; they need to be expeditiously transported to the appropriate hospital in under an hour to assure the best chance for survival.

It is noteworthy to reflect again upon data provided by the service chief’s and their staff in interviews as the EMS System Survey Tool.

**The lack of manpower is a significant issue.** The availability of on-call personnel has eroded due to a wide variety of social and economic factors. Those same factors that prevent people from responding make aggressive recruitment efforts less effective. The important take away is this. **The lack of immediately available personnel to respond to a call results in prolonged response times; prolonged response times reduce a patients likelihood to recover without deficit and place survival from a sudden out of hospital medical emergency at risk.** If personnel are not immediately available to respond, there is a delay. That delay may last until the paramedic service, if simultaneously dispatched with the community ambulance arrives on the scene or until a mutual aid ambulance staffed by on-call personnel from a neighboring community arrives on scene. It is not uncommon in those circumstances for patient to wait more than 30 minutes for a transport unit to arrive.

EMS chiefs have also identified that the PSAP must re tone the community ambulance service in search of available personnel to fill out an ambulance crew 20%- 80% of the time during certain time period of the day.

**This delay is deadly and unaddressed exposes the communities to liability.**

**The Economics of EMS:**

Revenue and cash flow performance of EMS is based on three variables- transport volume, payer profile and patient acuity which correlates with clinical level services required.
Payer profile segregates economic performance by insurance payer. If the payer profile favors commercial insurance over Medicare, Medicaid and Self Pay, cash flow will increase. If there is a shift in payer profile away from commercial insurance, there is often a decrease in cash flow. Likewise, increases and decreases in transport volume and clinical services rendered (BLS vs. ALS) will result in additional or reduced cash flow based on the impact on payer profile. There are multiple commercial insurance options based upon every health plan. Those options which are decided upon by the patient’s employer dictate reimbursement thresholds and the providers’ ability to balance bill. 9-1-1 EMS organizations have no influence or control over these factors.

Exhibit VIII details the payer profile for the communities.

**Exhibit VIII: Payer Profile by Community:**

<table>
<thead>
<tr>
<th>Town</th>
<th>Medicare</th>
<th>Medicaid</th>
<th>Insurance</th>
<th>Self Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deerfield*</td>
<td>48%</td>
<td>8%</td>
<td>41%</td>
<td>3%</td>
</tr>
<tr>
<td>Sunderland</td>
<td>50%</td>
<td>8%</td>
<td>40%</td>
<td>2%</td>
</tr>
<tr>
<td>Whately</td>
<td>42%</td>
<td>7%</td>
<td>51%</td>
<td>0%</td>
</tr>
<tr>
<td>Averages</td>
<td>46.7%</td>
<td>7.7%</td>
<td>44%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

* These are approximations due to constraints associated with data made available by the Town’s contracted billing service.

As a 9-1-1 provider, EMS agencies are mandated to treat and transport all patients without regard to their ability to pay for the services rendered.

Government insurance programs pay a set amount of money in accordance with a defined State (Medicaid) and Federal (Medicare) fee schedule. The balance between what a service charges and what Medicare and Medicaid allow are mandated contractually write offs- meaning the patient can not be balance billed.

Reimbursement of self-pay accounts averages $.04 on the dollar charged nationally.

Commercial Insurance currently reimburses 70-95% of the retail charge based upon the individual plan specifics. Historically services have offset their losses in caring for Medicare, Medicaid and Self Pay patients by increasing their retail rates in an effort to maximize commercial insurance reimbursement in a process known as cost shifting. However the commercial insurance especially Blue Cross Blue Shield (BCBS) is taking steps to limit cost shifting. Numerous EMS organizations are being threatened to reduce their retail charges or risk losing benefit assignment by BCBS. If this approach is successful in driving down healthcare costs, it will become a standard in the healthcare industry requiring EMS agencies to cost shift to the local tax base.

Caution is urged to any stakeholder who believes that EMS should be solely funded based upon transport fees. That is a completely false assumption.
9-1-1 EMS services are part of the public health- public safety net communities provide their residents. EMS must be funded with the same priority as communities fund essential Fire and Police services. Due to the volatility associated with transport volumes, severity of the patients’ condition, the reimbursement constraints associated with individual health insurance programs, communities should fund the entire expense of EMS to assure a consistent level of performance. Funding EMS based solely upon revenue recovery risks patient lives.

All of the communities have contracted with billing vendors to invoice patients and their health insurance programs. An analysis of the FY’11 billing data is presented in Exhibits IX and X.

Exhibit IX details the gross billables associated with the transports managed by the community based EMS services. In FY’11 the services posted total gross billables of $507,995.00. As previously identified in Exhibit III, there were a total of 759 patients transported in the communities during that time period. As result the communities lost the opportunity of an additional $98,149.00 in gross billable revenue.

**Exhibit IX: FY’11 Gross Billables:**

<table>
<thead>
<tr>
<th>Town</th>
<th>Transports</th>
<th>Total Sales</th>
<th>Av. Charge per call</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deerfield</td>
<td>397</td>
<td>$337,744.00</td>
<td>$850.81</td>
</tr>
<tr>
<td>Sunderland</td>
<td>159</td>
<td>$133,696.00</td>
<td>$840.85</td>
</tr>
<tr>
<td>Whately</td>
<td>70</td>
<td>$36,555.00</td>
<td>$522.21</td>
</tr>
<tr>
<td>Total</td>
<td>626</td>
<td>$507,995.00</td>
<td>$737.96 av.</td>
</tr>
</tbody>
</table>

Exhibit X details cash received as a result of the transports managed by the local services. The communities received a total of $284,540.00 to offset their operational expense of EMS. This represents a collection rate of 56% of the total dollars charged. In keeping with the data in Exhibit III, there was a lost opportunity to recover an additional $54,963.00 of cash flow due to the reliance on outside mutual aid ambulances.

**Exhibit X: FY’11 Cash Received:**

<table>
<thead>
<tr>
<th>Town</th>
<th>Transports</th>
<th>Total Cash</th>
<th>Av. Cash per Call</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deerfield</td>
<td>397</td>
<td>$180,733.00</td>
<td>$455.25</td>
</tr>
<tr>
<td>Sunderland</td>
<td>159</td>
<td>$83,888.00</td>
<td>$527.59</td>
</tr>
<tr>
<td>Whately</td>
<td>70</td>
<td>$19,919.00</td>
<td>$284.55</td>
</tr>
<tr>
<td>Total</td>
<td>626</td>
<td>$284,540.00</td>
<td>422.46</td>
</tr>
</tbody>
</table>

*Data source- Summary Statements provided by Comstar and Coastal Billing Services.*

The reliance on mutual aid to offset the lack of available manpower to staff ambulances not only exposes the community to risk associated with response time performance and clinical care, it erodes the towns’ ability to maximize their return on their investment in their EMS system.

**Current EMS System Design:**
9-1-1 Emergency Medical Services (EMS) is an essential community function that frequently arouses intense emotion over cost, reliability and life or death circumstances. The effective, long term performance of a 9-1-1 EMS system depends upon the overall design. Each system must be designed to achieve four essential performance requirements. Those requirements include:

- Clinical Excellence.
- Response Time Reliability
- Economic Efficiency
- Customer Satisfaction.

Collectively, the four (4) essential performance requirements are measurable outcomes that optimize patient care.

By designing a system that focuses on these core components, community and government leaders responsible for ensuring a clinically superior and fiscally viable system recognize the components are the same regardless of the provide type (private for profit; private not for profit; municipal third service; hospital based or fire or police department based. By focusing on the essential components of system design, the leaders insulate and subordinate political and special interest needs to the needs of the patients and overall needs of the community they serve.

There are five (5) key hallmarks to EMS system design. Those hallmarks include:

- 9-1-1 EMS providers must be held accountable for achieving defined results.
- There should be an independent oversight committee.
- The system must account for all costs.
- The system must have features that assure economic efficiency.
- The system must ensure long term high performance service.

An EMS system consists of those organizations, individuals, facilities and equipment whose participation is required to assure the timely and medically appropriate response to each request for out-of-hospital care and medical transportation. By defining the system from the patient’s point of view, performance results ensure the patient is served first-before any other interests. This allows the different provider models and their results to be compared objectively as to how they best serve the patient, rather than how best they serve the individual provider. Our recommendations are based upon these core principles.

**Clinical Excellence:**

Clinical excellence by definition means providing the right level of clinical services the patient requires by well equipped, trained, experienced EMS providers who provide consistently appropriate patient care. It is challenging for “on-call” EMS services in smaller communities with lower call volumes to achieve clinical excellence, as it requires a significant time commitment as well as call exposure to develop and maintain.
The individual members of the local community EMS organizations we met with are truly dedicated and committed to their services and its patients. However, EMS is not the primary vocation for the majority of those providers. Their time commitment to EMS activities is shared with vocational and family responsibilities. We found that each service relied upon a few providers who are incredibly active in taking calls and have significant experience. But the majority of the services providers see 10 or fewer patients a year—dedicated, trained and solid citizens—but with limited experience and exposure outside of mandatory refresher training and continuing education. Maintaining their proficiency takes a significant investment of time and effort on the organizations behalf as well as the providers. In fact several of those providers spoke openly of their lack of confidence caring for critical patients based on the lack of exposure to maintain skills.

Smaller communities with low call volumes choose to provide basic life support EMS services and contract with a dedicated regional provider for Advanced Life Support Paramedic Services. A few communities have provided Advanced Life Support at the Advanced EMT level. Providers at this level have enhanced assessment skills, and may initiate IV therapy and use an advanced airway. However, skill proficiency is dependent upon having adequate volume of patient contacts to maintain IV and advanced airway skills. Additionally, the clinical advantage of simply an IV being established in the field absent of the pharmacology the IV supports—adds little value to the patient outcomes. While we laud the providers who have undertaken the additional training to be certified at this level, skill proficiency can not be maintained alone with a call volume of 100-200 calls per year absent of those providers practicing their skills at another clinical sight.

Individually the response and transport volumes of communities included in this study are not sufficient to warrant or support individual community based paramedic ambulance services. Collectively, the three area towns have an adequate call volume to support a regionalized approach to paramedic services.

A regionalized or shared approach provides several opportunities to enhance and maintain clinical excellence.

- Unified clinical quality improvement process will afford providers consistent pro-active feedback on their care of patients.
- Unified education and training will assure that all providers in the system are trained in accordance with the same standards.
- Education and QI can be delivered through various IT platforms meaning the providers can be at home, work, or traveling and obtain training anywhere they have a web browser connectivity.

The current approach to paramedic response is uncoordinated. There is no guarantee that a paramedic will be available to respond to any of the communities as one agency has not been tasked to provide this service. It is provided on an as available commodity option. A well thought out and coordinated EMS system provides a consistent level of care for its residents and patients. Paramedic level Advanced Life Support is an industry standard not a commodity. The communities should develop consistent paramedic response capacity regardless of the changes to the EMS system. There are two options for this:
a. Assure any regionalized approach to EMS included paramedic staffed and equipped ambulances.
b. Contract with an outside agency to provide consistent paramedic response services.

**Response Times Reliability:**

As previously cited, fractile response time standards should be developed using the 90th percentile as the expectation. This will identify the amount of time it takes for an EMS service to respond in 90% of all cases as opposed to using averages which lowers the benchmark to the 50th percentile. An average time provides no realistic indication of system performance - it simply means that in 50% of all response the service arrives at the scene in x minutes or less; but in 50% of the cases it takes the service longer than x to arrive at the scene.

Services should routinely evaluate the distribution of calls by time of day and day of week for responses as well as transports. Additionally all formats of missed calls should be documented.

This information is essential in determining the total number of staffed ambulances required to support the regional EMS system to assure it is meeting the needs of its residents and patients.

Based on the data previously analyzed, a fully staffed ambulance covering the three communities located at either the South Deerfield Fire District location would minimally result in a 30% consistent improvement in ambulance response time based upon similar projects in a suburban/rural areas based upon call location and immediate ambulance availability. As an alternative, the Sunderland Fire Department location would provide a consistent 27% improvement in response time based on the same parameters. In other words, the anticipated first out/first due fractile ambulance response time would result in a fully staffed ambulance being on scene within 15 minutes or less 85% (Sunderland) - 90% (South Deerfield) or more of all EMS responses dispatched when the ambulance was fully staffed and available.

This was determined by analyzing the MATRIS data as well as evaluating call locations using call location geocode overlay on GIS maps of each community response time GIS maps included in Appendix I and Appendix II.

Appendix I includes response time intervals for each community based on minutes intervals from that communities EMS station using the posted speed limits.

Appendix II includes response time intervals for all three communities from based upon a regional EMS being located at one of the current EMS Station locations. That data suggest the best possible location to base any regional EMS is the South Deerfield Fire District Station.

Additionally, the overall impact of using on-call staff and recalling career staff to staff the second due ambulance or during periods when on-call staff have primary coverage will not erode the current level of response time performance during off hours. In fact, if an ambulance was staffed between the hours of 9A and 9P, the call impact on call personnel would be reduced by 50% and may in fact support renewed interest in active participation.

**Economic Efficiency:**
The cost associated with an EMS system varies based upon multiple factors. Factors influencing the cost include the following:

- Response time thresholds
- Size (geography and population) served by the EMS system
- Community demographics (local economy)
- Level of clinical services provided by the EMS system
- Provision of 9-1-1 only or 9-1-1 and non-emergency transportation services.
- Response volume.
- Transport volume.
- Patient acuity
- Estimated task time per unit of service delivered.
- Percentage of elderly
- Percentage of uninsured and Medicaid recipients
- Payer profile (percentage of patients covered by commercial health insurance, Medicare, Medicaid and self-pay accounts)
- Number of staffed units deployed to meet response time performance thresholds
- Tiered or integrated clinical delivery system (ALS as a separate response or staffed paramedic ambulances).

There are a number of approaches used by communities to fund their EMS systems. The most common include:

- Charging patients a user fee that is reimbursed by their health insurance program.
- Providing government subsidies from the local tax base.
- Providing a subscription program allowing participants to pre-pay their co pays or deductibles as an annual donation.
- Subscriber fees tied to a utility bill (water, electrical or phone).
- Formation of a separate taxing district.
- Fund raising programs.

Usually, systems are funded by one or more of the general approaches listed above.

Most EMS systems today charge user fees and offset operating losses with some format of tax based subsidy. The subsidy may be in the format of a direct line item on the budget for revenue support or involving a sharing of expenses.

Subscriptions programs have had limited success and come under the scrutiny of the State Insurance Commissioners offices when programs are underfunded. EMS Taxing or hospital districts are in wide use across the southwestern, central and northwestern parts of the country they are not legal entities in any New England state. Subscriber fees have only been attempted in the west and northwestern parts of the country.
Key economic performance indicators include the cost per response, cost per transport and unit hour utilization (UHU) ratios. The lower a systems cost per response/cost per transport the greater the efficiency. Rural and sparsely populated suburban areas however are challenged as the low geographic population density and call volumes make it difficult to achieve the efficiencies achieved in urban or densely populated suburban areas. The goal remains to keep cost per call as low as possible without negatively impacting the quality of services rendered.

Regionalization promotes economic efficiencies. A number of communities confronting the challenges being experienced by the study communities often apply one of two solutions:

a. Hire full time staff to offset the erosion of on call personnel
b. Integrate EMS into the local fire department, recruit and employee cross trained firefighter/EMTs to serve a dual role.

The costs associated with those approaches are significant and long lasting. While communities phase in full-time personnel to supplement on-call staff, it is fiscally prudent to examine the long term costs of staffing an ambulance twenty-four hours per day, seven days per week.

Scenario A requires eight full-time EMTs and Paramedics in addition to leadership. As each community has a different wage scale, the committee used Deerfield’s EMS wage rates (higher than the other communities) as a basis to determine blended averages for EMTs, Paramedics and management. Benefits costs are based upon the cost per employee for the Town of Deerfield. Using those labor costs as a basis for the Summary Income Statement in Appendix III, the project team determined the cost of staffing a paramedic ambulance as outlined in Scenario A at $784,000.00 annually. If all three communities follow the same approach duplicating efforts, the net annual impact to the tax payer in labor cost alone is in $2.3MM annually.

Scenario B would result in potentially higher labor costs by 15% due to the mandatory recall of personnel to cover ambulance response in the event of a fire response and additional training to be cross-functional.

The concept of shared services creates a template for cost efficiency by reducing needless duplication of effort. Specific to the study communities, the communities are geographically contiguous. Centrally located staffed ambulance(s) will consistently provide the communities with a reliable response time performance that is faster than the current system. Based on the combined call volume there is only a need for two Class I transporting ambulances and one Class 5 ambulance to serve the three communities. This factor alone provides a net savings $50,000 annually in capital reserve investments. There is also savings in space allocation expenses, medical supply inventory expense, office supplies, insurance costs to name a few.

The combined call volume is sufficient to support upgrading the service to provide paramedic advanced life support reducing or eliminating the expense line items to reimburse outside paramedic response organizations for services rendered.
Integrating three community based EMS agencies into one shared municipal organization is the best approach to assuring long term economic efficiency. Regionalization spreads the cost of operating one agency over the three participating communities limiting the net cost impact on each community while providing a service that meets or exceed the benchmarks.

**Customer Satisfaction:**

None of the services are collecting or analyzing customer satisfaction. This is a key factor in developing, enhancing and assessing EMS system performance. Many people accept the status quo or believe that if you life in the country you can’t expect the same quality of service as you receive in an urban environment.

In other areas of the country EMS administrators have learned you often don’t know if you are meeting a customers needs unless you ask. Any new approach to EMS delivery should include a customer service survey tool that is forward to every patient. The results should be analyzed as part of the over all system performance.

**Options and Recommendations**

**Option 1:**

Continue to monitor the current challenge and make specific community focused as deemed appropriate for each community.

**Description:**

This option is based upon each community having different needs and opinions regarding the threshold necessary to make and implement a change in support of an integrated shared EMS system. Communities with lower response and transport volumes realize there is a significant issue with manpower, but not as acutely as communities with larger populations, response and transport volumes. The option places the decision of what to do at an individual local community level. It suggests each community add personnel as they deem appropriate to support the on-call personnel.

**Summary Discussion:**

This approach does effectively address any of the challenges identified in the reports of June and November 2011. It exposes the communities to continued risk by reliance on an EMS deployment model deemed to be unreliable and unsustainable. Individual community resolution results in unjustified expense, sub-clinical performance and response times, continued reliance on outside mutual aid, reduced revenues through an unnecessary duplication of efforts.

**Recommendation:**

The project team does not recommend this option.
Option 2:

Develop a regional municipal paramedic intercept-support service.

Description:

In this model one of the three services takes on responsibility for developing a paramedic intercept program. The program requires two Class 5 ambulances (4 WD or Pick up Truck) to be purchased and equipped with ALS gear. The unit would be staffed minimally 12 hours per day, seven days per week with a Massachusetts licensed paramedic. The unit would be simultaneously dispatched with the community based ambulance on all life threatening calls or on all calls if the community based ambulance did not have a full crew scheduled. The paramedic would respond to the scene in the non transport unit- meeting the ambulance on scene. If the patient required paramedic level care, the medic would accompany the patient to the hospital in the back of the community ambulance- leaving the response unit on scene or having another community responder drive the unit following the ambulance to the hospital. Additionally the system would provide the communities with a high standard of clinical care and assure the timely initiation of care if the local ambulance could not staff a crew- require a delay in transport by a mutual aid ambulance. With in a three year time period, the system would have to be staffed 24/7.

The staffing requirement would require 5 FTEs working a 42 hour work week. These employees would be in addition to the current employees working in the system.

The operating community and service would need to develop an inter-local agreement with other participating communities. The system should report to an oversight board comprised of community stakeholders inclusive of the three service chiefs, three town administrative professions and the EMS system medical director.

This approach would create additional revenues from unrealized ALS charges when a paramedic intercept was unavailable from outside agencies. Additionally the operating service would implement all of the core recommendations.

The capital cost associated with this project is $250,000.00 to acquire two Class 5 equipped ambulances in addition to then current system requirements.

The operating cost associated with this model enhancement is and additional $500,000.00 per year beyond the current system costs for a total expense of $1.1MM.

The additional net cash associated with this model is $20,000.00 per year

Summary Discussion:

The Benefits:

- Assures a consistent high level of care on 70% of all responses.
• Re directs expense revenue back into the system.
• Provides additional manpower when only one provider responds to an ambulance call- allowing that community to transport.
• Provides high level of care and allows treatment to start while waiting for a mutual aid ambulance.
• Keeps current ambulances and personnel in place.

The Deficits

• Does not help if a community has no crew available to staff ambulance
• Requires communities to support a new initiative along with current expenses.
• Creates little limited additional revenue and adds a level of duplication in response assets until such time as a fully integrated regionalized system can be implemented.
• Total net expense (net cost after recovery of collectable accounts) is equal to the cost associated with operating a municipal regional ambulance service with only 20% of the benefit.

Recommendation:

The committee recognizes this approach as a minimal first start leading to the development of a regionalized service but it does not endorse it as it does not adequately address the system challenges. As such it is not recommended.

Option 4:

Enhance response area coverage responsibilities of one (1) existing town EMS Department to be a primary provider for all communities - leaving the current services in place in remaining towns. The designated agency would minimally staff a first call- first response Class I paramedic ambulance twelve hours per day, seven days per week. The remaining twelve hours would be staffed by on call personnel with the caveat that any hours uncovered by staffed personnel would result in the use of additional paid personnel. The designated service would purchase an additional fully equipped Class I ambulance creating immediate ready reserve capacity as well as a Class 5 ambulance that would provide a fully equipped non transport response unit to the system as well.

The ambulance would respond to its primary town as well as to any other participating community to providing primary paramedic response as deemed appropriate as well as ambulance transport when the community had less than full scheduled on-call personnel via simultaneously dispatch. Second call would be covered by on-call personnel. The designated service would coordinate the system implementing all core recommendations.

The system would maintain the current services business name and back office support and provide services to participating communities through an inter-local agreement. The system would be funded by transportation revenues with the deficit funded by a tax based subsidy from the primary community with the marginal costs of providing services to other communities offset by an appropriate tax based subsidy based upon an EQV formula or percentage of use based on initiated responses.

This option keeps the transport asset and community based on- call personnel in their respective communities. It eliminates the perceptual concerns associated with access parts of the coverage territory in the of the limited access highway interruption.
The cost of operating is detailed in the Summary Income Statement located in Appendix II. Variant upon the extent of staffing, the net expense to the community ranges from $687,000.00-$864,000.00 per year.

Benefits:

- Keeps existing ambulances and on-call personnel in each community.
- Provides a consistent high level of care to all patients via the first call/first response ambulance.
- Provides consistent regional transport coverage to the participating communities resolving the delay deficit.
- Provides for immediate ready reserve ambulance capacity for mechanical issues as well as second call.
- Assures first call response during peak hours.
- Will manage 70% of the responses during peak demand.
- Reduces reliance on mutual aid ambulances.
- Reduces line item budgets to pay for outside paramedic services.
- This approach to staffing is similar to rural community fire departments.
- Efficient model of operation as opposed to adding staff to each community.

Deficits:

- Based on staffing model relies upon on-call personnel to cover off hours and second calls in local communities.
- Requires greater tax investment from participating communities to support.
- Place significant and truly dangerous financial risk on sponsor community. Participating communities only being required to underwrite the marginal costs does not take into consideration the overall cost of system readiness or infrastructure support.

Recommendation:

The project team recognizes this approach as a better model Option 2. However, the financial risk to the sponsor community, the complexity of arranging agreements, the risk of a community exiting secondary to lacking a financial stake in the success of the endeavor is too great. As such the project team does not recommend this model for implementation.

Option 4:

Create an integrated municipal regional ambulance service providing one (1) fully staffed, twenty-four (24) hours per day, seven (7) day per week first response paramedic ambulance. The regional service would minimally staff a first call- first response Class I paramedic ambulance twenty-four hours per day, seven days per week. Simultaneous or second calls would be managed by on call personnel in the ready reserve Class 1 or Class 5 ambulance or mutual aid provider. The primary response ambulance would be the current Deerfield ambulance. Based upon overall condition, either the current Sunderland or Whately ambulance would be the ready reserve Class 1 ambulance to start with its planned replacement no later than 2016. The remaining existing ambulance would be used as a trade 1 to acquire a new fully equipped Class 5 ambulance. This approach addresses several key issues. First it provides a consistent higher level of service. It reduces reliance on mutual aid ambulances by providing a 24/7 staffing model and optimizes revenue recovery. Equally important it provides to consistent quicker response times. All current full-time and on-call staff would be eligible to participate in the new service. Based upon the response time analysis, it is recommended the new service be based at the South Deerfield Fire District Station.
The system would be governed by a regional Board oversight board comprised of seven members as detailed below.

- Each participating town’s administrative professional
- Each town’s current EMS director or select board appointed representative with expertise in EMS administration.
- The EMS System Medical Director
- The Regional EMS Chief serves as an ex-officio non voting member.

The Board would set global policy, develop budgets, monitor and report on system performance to assure accountability. The designated provider community would provide all back office functionality.

The financial model conservatively optimizes revenues and expense savings. The system would manage 910 responses and 760 transports annually. The projected net revenue as detailed on the Summary Income Statement in Appendix III is minimally $370,268.00 to a maximum of $385,226.00. The net expense to the communities is detailed as $630,825 to $813,314.00.

- This creates in a fully integrated regional service organized under the current business name of the primary service.
- The current Sunderland or Whately ambulance is relocated to the selected station location to function as a ready reserve ambulance eliminating the need to immediately purchase a second ambulance until FY’16.
- The primary service will equip the second ambulance to support Advanced Life Support Paramedic Level Practice.
- The primary service will purchase and equip a Class 5 non transport ambulance at the ALS Paramedic Level.
- The primary ambulance will be staffed with in-house personnel twenty four hours per day, seven days a week.
- Second calls will be managed by on–call personnel or mutual aid.
- It takes the pressure off on-call personnel and significantly reduces reliance on mutual aid.
- It provides the patients

Discussion:

Benefits:

- This option best addresses all of the identified system deficits.
- It provides a guaranteed first call response to all calls in the participating communities.
- It improves and stabilizes EMS response times.
- It reduces the work load for the on-call personnel.
- It resolves the inequity with the current paramedic response system.
- It reduces the reliance on mutual aid.
- It assures personnel treating patients have adequate exposure by managing a larger call volume.
- It reduces costs in comparison to each community developing a separate system.
- While not recommended, the approach can be phased in covering the busiest twelve hour time periods and adding staff as deemed appropriate.
The system is controlled by the stakeholders through an oversight board including the participating community administrative professionals, the local EMS Chiefs and the EMS Medical Director.

- The system will cover 90% of all responses.
- Response time reliability will be improved.
- It eliminates duplication of effort by individual communities

Deficits:
- It requires a sustained increased contribution from the communities.

Recommendation:

The project fully endorses implementation of this approach using the model that provides one (1) paramedic ambulance staff with full-time personnel 24 hour per day, 7 day per week. This is deemed the best approach to meeting the needs of the residents now and in the future.